



# Noninfectious Peritoneal Dialysis Exit Site Rash—An Unusual Case Report and Review of the Literature

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## INTRODUCTION

Peritonitis is one of the leading causes of morbidity in end-stage renal disease (ESRD) patients undergoing peritoneal dialysis (PD) and can lead to PD failure and even death.<sup>1</sup> Exit site infections (ESIs) can cause a 6-fold increase in the risk of peritonitis.<sup>2</sup> An ESI is characterized by purulent drainage, erythema, crusting, pain, and swelling at the PD catheter site. Once diagnosed, these infections are aggressively treated with antibiotics to prevent peritonitis. Case reports of noninfectious exit site rash and complications are rare, and we would like to add to the literature by reporting a case of PD exit site granuloma gluteale adutorum.

## CASE PRESENTATION

A 74-year-old Caucasian man with ESRD due to diabetes on continuous cycloer-assisted PDs (CCPD) presented with an 1- × 1-cm area of redness, itching with serous discharge around his PD catheter site for a 1-week duration. The patient denied trauma to the site, abdominal pain, fevers, or cloudy effluent. The patient was compliant with exit site care instructions and used mupirocin ointment as part of the care regimen. There were no recent changes in medications, bandages, or any history of povidone iodine use. On examination, patient had stable vitals, soft abdomen, and no purulent drainage could be expressed from the exit site. PD fluid cell count was obtained, which ruled out peritonitis. A provisional diagnosis of ESI was made. After obtaining exit site

cultures, the patient was started on oral cephalexin and topical gentamycin.

On follow up, it was noted that there were areas of skin desquamation at the exit site with increased itching (Figure 1). The patient was started on oral fluconazole, and a dermatology opinion was obtained. The patient underwent a shave skin biopsy.

The histopathological findings demonstrated skin with overlying parakeratosis and slight epidermal hyperplasia. There was epidermal edema with exocytosis, and focally, increased numbers of Langerhans cells. Within the dermis, there was a mixed inflammatory infiltrate, which included scattered eosinophils. No fungal organisms were identified. This report is consistent with spongiotic dermatitis with eosinophils, and a diagnosis of granuloma gluteale adutorum was made (Figure 2).

Topical zinc oxide was prescribed in addition to continuing topical antibiotic therapy, and there was significant improvement in 1 week (Figure 3).

## DISCUSSION

Erythema with pain and purulent discharge are hallmarks of ESI and should be treated aggressively to prevent peritonitis. However, erythema with purulent discharge can also result from trauma or contact dermatitis with secondary infection. There have been few case reports in the literature on noninfectious PD site dermatitis.

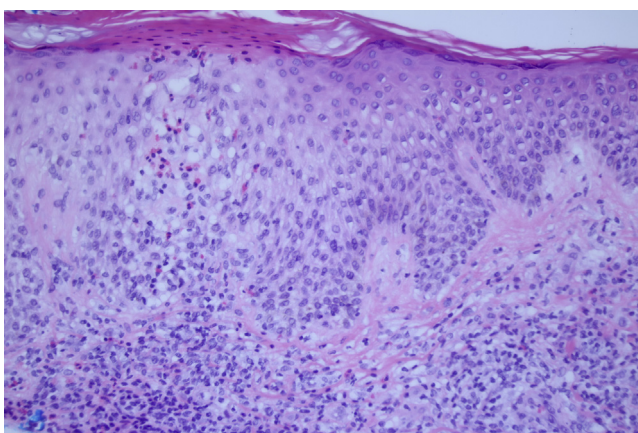
There is 1 case report of an allergic contact dermatitis due to gentamycin use, and 2 pediatric case reports due to povidone iodine use (Table 1). Our patient had



**Figure 1.** Exit site lesion.

the rash before gentamycin use and did not use povidone iodine for exit site care.

Granuloma gluteale aldutorum is part of the erosive papulonodular dermatosis disease spectrum and is believed to be from irritant contact dermatitis. It has been described in children as diaper rash<sup>8</sup> and in adults with irritation of the skin from urine or



**Figure 2.** The histopathological findings demonstrated skin with overlying parakeratosis and slight epidermal hyperplasia. There was epidermal edema with exocytosis, and focally, increased numbers of Langerhans cells. Within the dermis, there are mixed inflammatory infiltrate with scattered eosinophils.



**Figure 3.** Resolved lesion.

topical benzocaine use.<sup>9</sup> Granuloma gluteale infantum/adultorum is an uncommon proliferative reactive condition in response to severe chronic irritant contact dermatitis, which is usually seen in the anogenital region of patients with chronic diarrhea and or urinary incontinence. Other predisposing factors include topical benzocaine use, occlusion, topical steroid use, and candida infection. To the best of our knowledge, this clinical presentation in an adult has never been reported with PD. Our conjecture is that the patient had some PD fluid leak, or had damp dressing pads contained under the overlaying Tegaderm dressing, making the area damp for some time.

**Table 1.** Review of known cases of noninfectious exit site lesions

Number of Cases	Authors <i>et al.</i>	Agent identified	Rash description	Measures taken
1	Gosmanova <i>et al.</i> 2015 <sup>3</sup>	Gentamicin-induced contact dermatitis	Ovoid crusted plaque, violaceous in color with a peripheral rim of erythema and without granulation	Stopping gentamicin cream and initiating hydrocortisone 2.5% cream. Switched to Mupirocin
2	Yavascaan <i>et al.</i> 2005 <sup>4</sup>	Povidone iodine	Patchy and linear erythema	Daily topical application of normal saline solution
1	Chasset <i>et al.</i> 2015 <sup>5</sup>	Povidone iodine	Bullous periumbilical eruption	Substitution of Betadine by chlorhexidine
1	Schmitt <i>et al.</i> 2017 <sup>6</sup>	Octenisept	Expanding erythematous rash	Avoiding the responsible allergen
1	Kurihara <i>et al.</i> 1985 <sup>7</sup>	Silicone rubber	Eczematous skin rash	Antihistaminic ointment and insert a piece of gauze under the lesion

In conclusion, ESI is the main diagnosis for catheter site erythema, pain and discharge, and empirical treatment with antibiotics is generally warranted. There are noninfectious complications associated with PD,<sup>10</sup> including noninfectious ESI lesions that are also in the differential diagnosis. A prompt dermatological assessment and skin biopsy should be considered if there is no resolution of the symptoms in presumed ESI. Allergic and irritant contact dermatitis are treated by withholding or removing the offending agent and with topical steroids and barrier creams. Topical zinc oxide cream helped resolve our case of ICD.

## DISCLOSURE

All the authors declared no competing interests.

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